Abstract Submitted
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One Dimensional Nanocomposites NIKHIL SHARMA, DARRIN POCHAN, Univ of Delaware, Dept of Materials Science & Engineering — Tailoring the structure of hybrid materials at the nano-scale in order to enhance their properties could produce advanced materials with remarkable attributes and poses significant research challenges. One- dimensional nanoparticle assemblies are an interesting class of materials that may provide an insight into the fundamentals of quantum mechanics of nanomaterials and have potential applications as sensors, in drug-delivery, and in the conduction of novel signals such as phonons and spin states. Experimental work with electrospinning of polyethylene oxide fibers with inorganic particles (silica and iron) is underway that utilizes a coaxial capillary electrospinning apparatus for the formation of one- dimensional assemblies of nanoparticles. The effect of change in solution concentrations and relative flow rates in internal and external channels of the coaxial electrospinning apparatus on the inter-particle distance are being investigated.

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